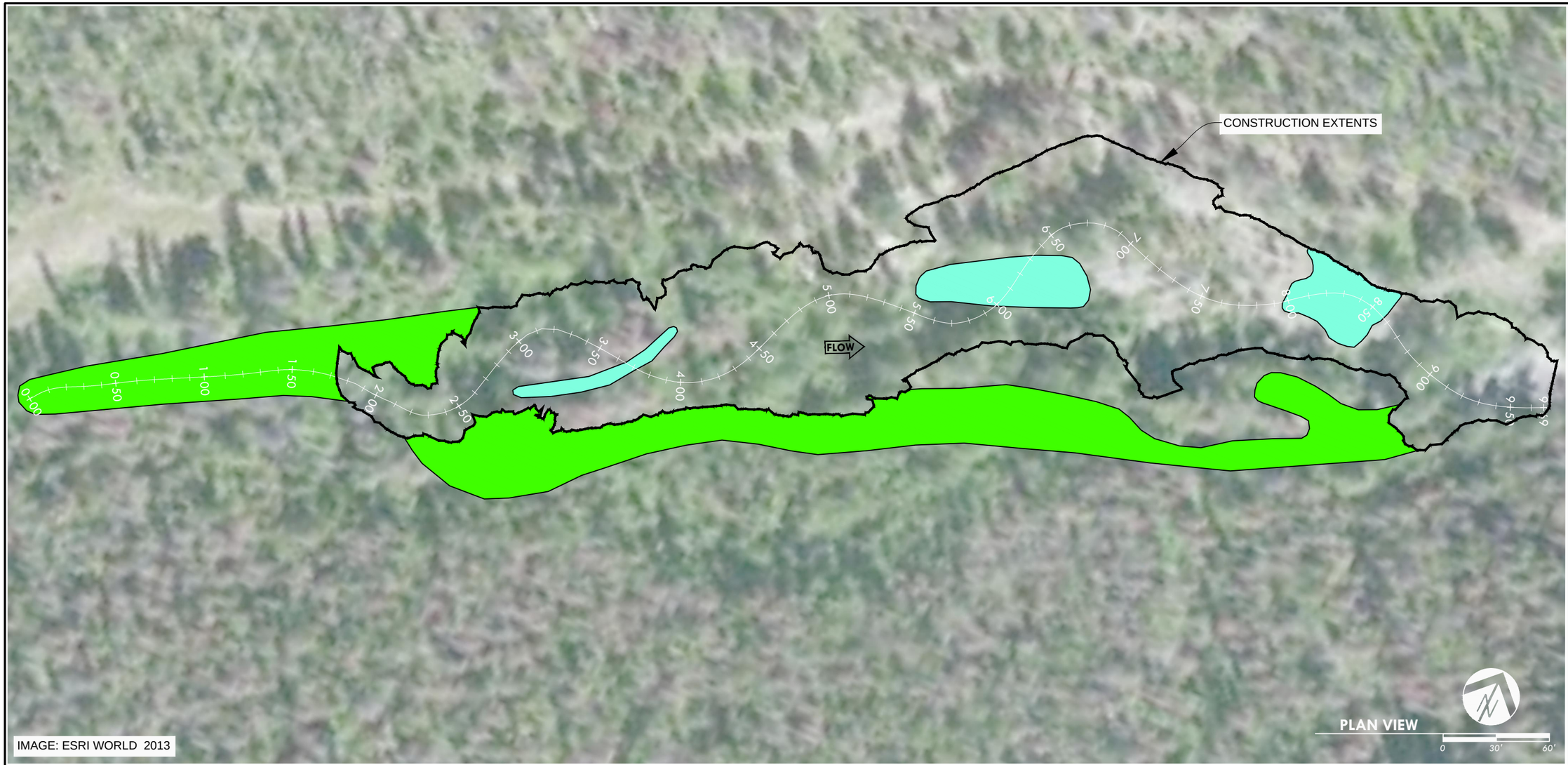

TREE & SHRUB SALVAGE AND TRANSPLANT

MATURE SHRUBS AND SMALL TREES LOCATED WITHIN FLOODPLAIN GRADING LIMITS SHOULD BE SALVAGED AND TRANSPLANTED TO THE EXTENT FEASIBLE. WHERE POSSIBLE, SURFACES SUPPORTING DENSE WOODY RIPARIAN VEGETATION OR MATURE TREES SHOULD BE PRESERVED AND INTEGRATED INTO THE FLOODPLAIN GRADING. THE CONSTRUCTION SEQUENCING SHOULD TAKE INTO CONSIDERATION PRESERVATION AND SALVAGE OPPORTUNITIES.

SHRUBS SHOULD BE HARVESTED IN A MANNER THAT ENSURES THE ROOTBALL REMAINS INTACT. SHRUBS SELECTED FOR SALVAGE AND TRANSPLANT SHOULD BE YOUNG, VIGOROUS AND RELATIVELY SMALL IN SIZE (6 TO 8 FT TALL, RATHER THAN 12 TO 15 FT TALL). LARGER SHRUBS SHOULD BE STOCKPILED WITH OTHER WOODY DEBRIS FOR USE IN FLOODPLAIN ROUGHNESS AND STREAMBANK TREATMENTS. WITHIN GRADING LIMITS, THERE ARE NUMEROUS DOGWOOD, WILLOW, ALDER AND COTTONWOOD THAT ARE THE APPROPRIATE SIZE FOR SALVAGE AND TRANSPLANT. SHRUBS SHOULD BE HARVESTED WHILE DORMANT TO REDUCE TRANSPLANT SHOCK AND INCREASE THE LIKELIHOOD OF SURVIVAL. THE TOPS OF THE SHRUB SHOULD BE PRUNED TO APPROXIMATELY THREE TO FOUR FEET IN ORDER TO BALANCE THE ROOT:SHOOT RATIO OF THE TRANSPLANT. SALVAGED SHRUBS AND TREES SHOULD BE DIRECTLY TRANSPLANTED ALONG THE NEW CHANNEL OR IN DEPRESSIONS IN THE FLOODPLAIN. TRANSPLANT LOCATIONS SHOULD BE IDENTIFIED PRIOR TO SALVAGE OF SHRUBS AND TREES. TRANSPLANT HOLES SHOULD BE TWICE THE WIDTH OF THE TRANSPLANT AND AT LEAST 0.5 FEET DEEPER THAN THE TRANSPLANT ROOTBALL.

LEGEND

COVER TYPE	AREA
VEGETATION PRESERVATION	0.52 AC
VEGETATION SALVAGE	0.12 AC

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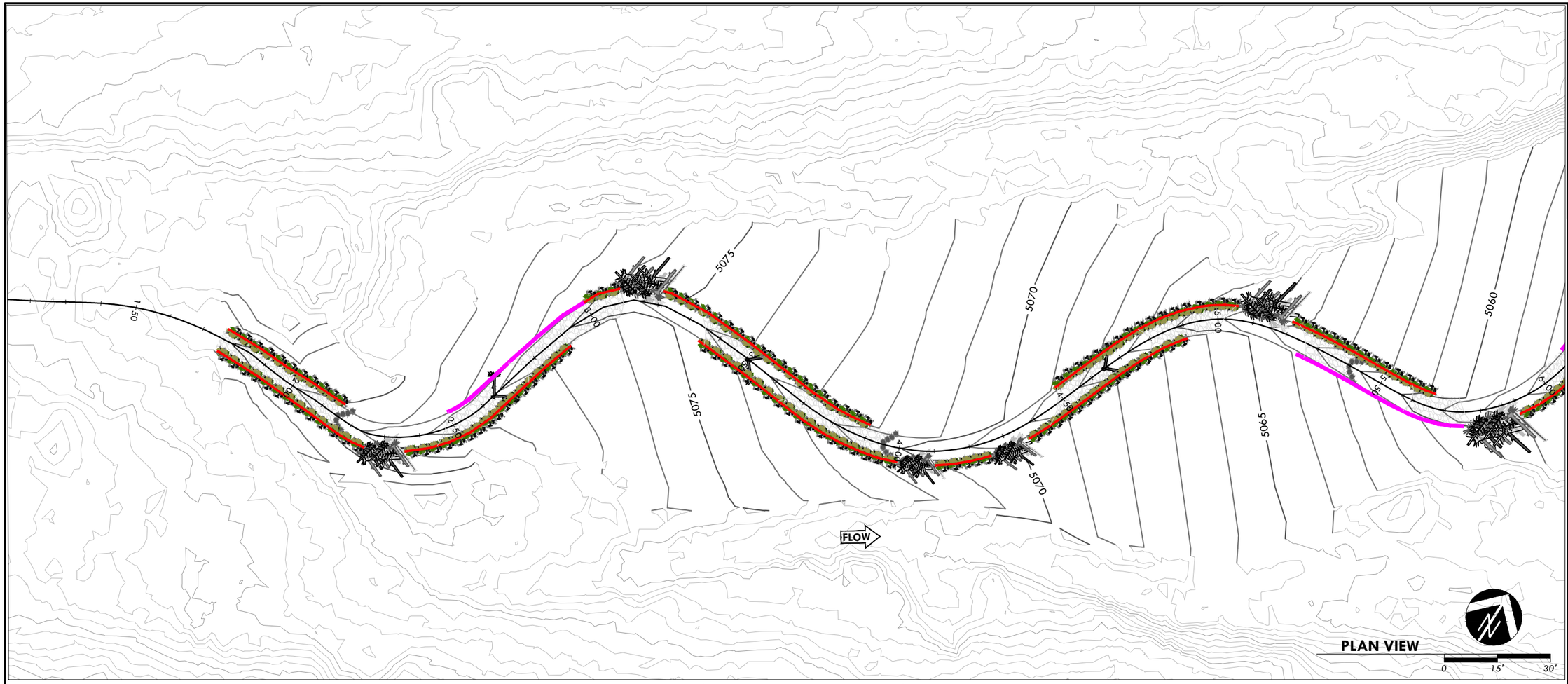
PRESERVATION AND VEGETATION SALVAGE AREAS

NO.	DATE	BY	DESCRIPTION	CHK
1	02-15-14	NW	FINAL DESIGN	JM

PROJECT NUMBER
RDG-14-002

SHEET NUMBER
7.0



PLAN VIEW AND STRUCTURE LOCATIONS - 1

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LEGEND

BANK STRUCTURES	DETAIL SHEET #
LARGE WOOD STRUCTURE TYPE (LWST 1)	12.0
VEGETATED WOOD AND BRUSH FASCINE TYPE 1 (VWBF 1)	12.1
VEGETATED SOIL LIFT TYPE 1 (VSLT 1)	12.2

CHANNEL STRUCTURES	DETAIL SHEET #
CONSTRUCTED RIFFLE (CR)	12.3
STEP POOL STRUCTURE (SP)	12.4
STEP POOL STRUCTURE (SP)	12.4

CHANNEL TOP OF BANK ELEVATIONS

STATION	ELEVATION (FT)
2+00	5080.65
2+50	5078.24
3+00	5076.30
3+50	5073.94
4+00	5071.63
4+50	5068.91
5+00	5065.72
5+50	5062.10

FEATURE LOCATIONS

STATION	FEATURE	STATION	FEATURE
2+15	RIFFLE	4+00	POOL
2+27	POOL	4+10	RUN
2+50	RIFFLE	4+25	RUN
2+65	RIFFLE	4+33	POOL
2+68	POOL	4+50	RIFFLE
2+75	RIFFLE	4+65	RIFFLE
3+10	RIFFLE	4+70	POOL
3+18	POOL	4+80	RIFFLE
3+35	RIFFLE	5+00	RIFFLE
3+50	RIFFLE	5+08	POOL
3+55	POOL	5+25	RIFFLE
3+65	RIFFLE	5+40	RIFFLE
3+95	RIFFLE	5+47	POOL

STRUCTURE SCHEDULE

STATION START	STATION END	BANK	STRUCTURE
1+75	2+15	L	VWBF 1
1+75	2+25	R	VWBF 1
1+75	2+15	C	CR
2+15	2+25	C	SP
2+25	2+35	R	LWST 1
2+35	2+90	R	VWBF 1
2+50	3+00	L	VSL 1
2+50	2+65	C	CR
2+65	2+75	C	SP
2+75	3+10	C	CR
3+00	3+10	L	VWBF 1
3+10	3+20	L	LWST 1
3+20	3+90	L	VWBF 1
3+35	4+00	R	VWBF 1
3+35	3+50	C	CR
3+50	3+60	C	SP
3+65	3+95	C	CR
3+95	4+05	C	SP
4+00	4+10	R	LWST 1
4+10	4+25	R	VWBF 1
4+25	4+35	R	LWST 1
4+35	4+90	R	VWBF 1
4+50	5+05	L	VWBF 1
4+50	4+65	C	CR
4+65	4+75	C	SP
4+80	5+00	C	CR
5+05	5+20	L	LWST 1
5+20	5+65	L	VWBF 1
5+25	5+75	R	VSL 1
5+25	5+40	C	CR
5+40	5+50	C	SP

Structure Description	Abbreviation	Drawing Sheet
Large Wood Structure Type 1	LWS1	12.0
Vegetated Wood and Brush Fascine Type 1	VWBF1	12.1
Vegetated Soil Lift Type 1	VSL1	12.2
Engineered Riffle	ER	12.3

NO.	DATE	BY	DESCRIPTION	CHK
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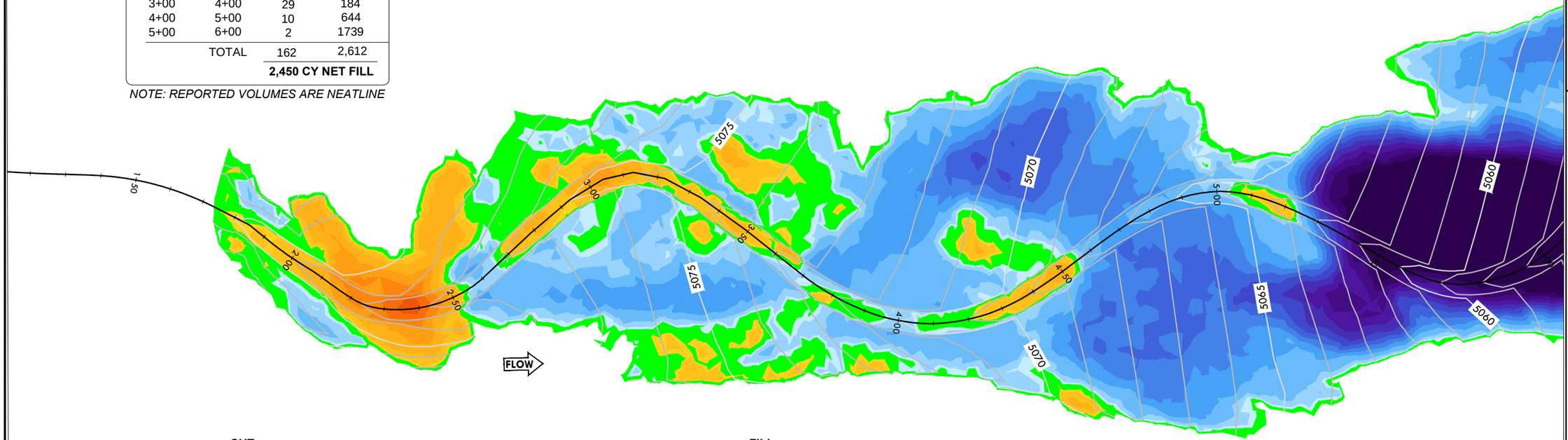
PROJECT NUMBER
RDG-12-067

SHEET NUMBER
8.0

EARTHWORK VOLUMES

STATION START	STATION END	CUT (CY)	FILL (CY)
START	2+00	4	3
2+00	3+00	118	42
3+00	4+00	29	184
4+00	5+00	10	644
5+00	6+00	2	1739
	TOTAL	162	2,612
		2,450 CY NET FILL	

NOTE: REPORTED VOLUMES ARE NEATLINE



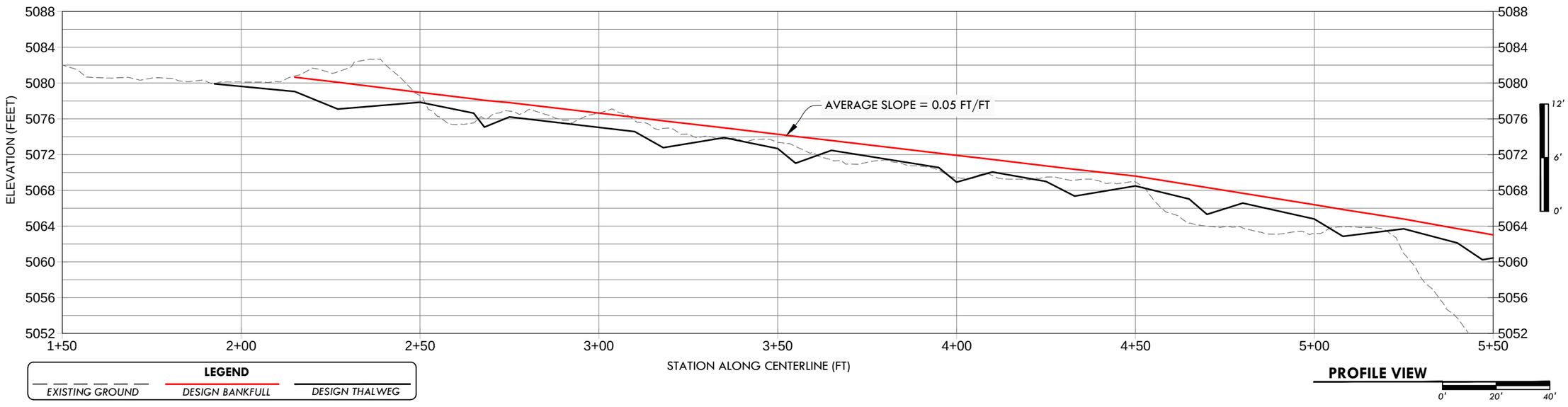
CUT: < -7.0' | -5.0' | -4.5' | -4.0' | -3.5' | -3.0' | -2.5' | -2.0' | -1.5' | -1.0' | -0.5' | -0.3'

FILL: 0.3' | 0.5' | 1.0' | 1.5' | 2.0' | 2.5 | 3.0' | 3.5' | 4.0' | 4.5' | 5.0' | 7.0' | >

EXISTING GROUND SURFACE COMPARED TO DESIGN SURFACE

PLAN VIEW

0 15' 30'



LEGEND

EXISTING GROUND | DESIGN BANKFULL | DESIGN THALWEG

PROFILE VIEW

0' 20' 40'

GRADING PLAN AND PROFILE - 1

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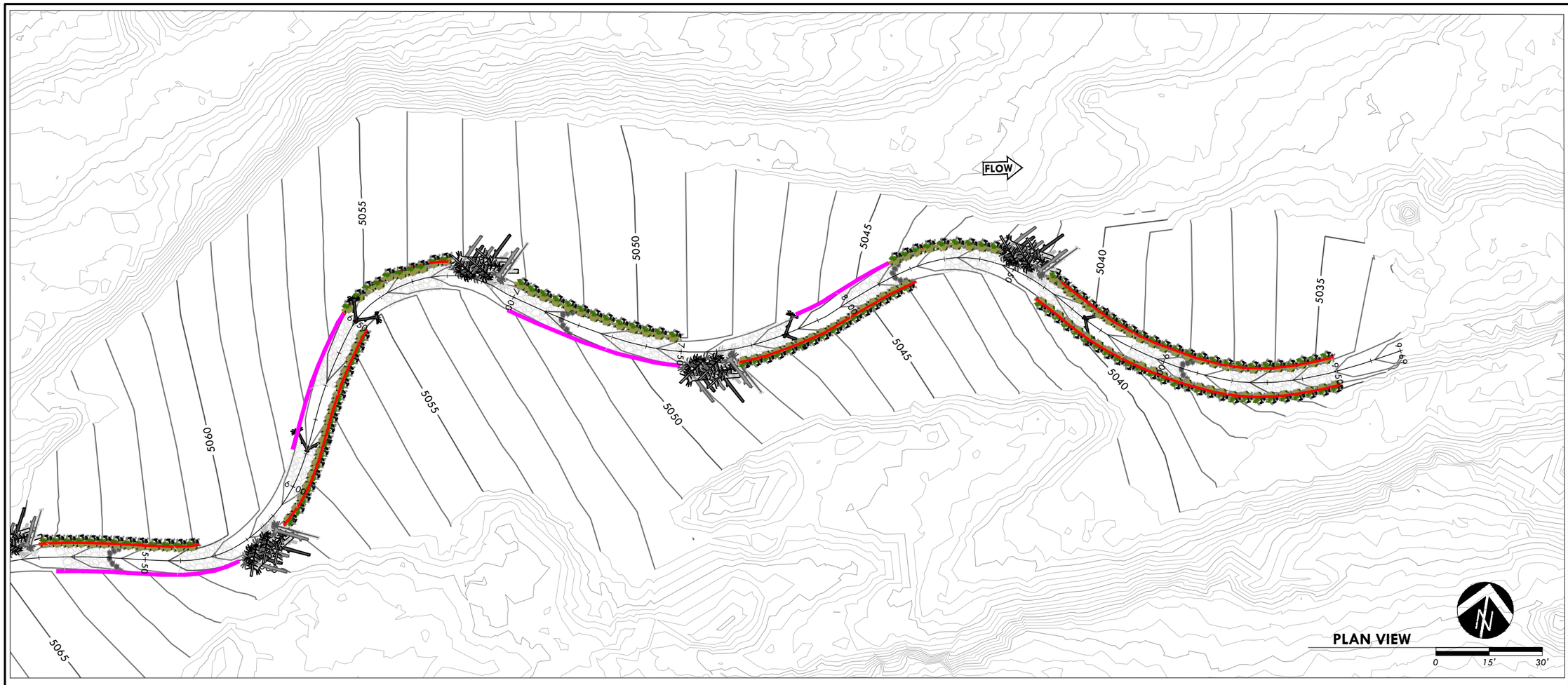
PROJECT NUMBER
RDG-14-002

SHEET NUMBER
8.1



PLAN VIEW AND STRUCTURE LOCATIONS - 2

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LEGEND

BANK STRUCTURES	DETAIL SHEET #
LARGE WOOD STRUCTURE TYPE (LWST 1)	12.0
VEGETATED WOOD AND BRUSH FASCINE TYPE 1 (VWBF 1)	12.1
VEGETATED SOIL LIFT TYPE 1 (VSLT 1)	12.2

CHANNEL STRUCTURES	DETAIL SHEET #
CONSTRUCTED RIFFLE (CR)	12.3
STEP POOL STRUCTURE (SP)	12.4
STEP POOL STRUCTURE (SP)	12.4

CHANNEL TOP OF BANK ELEVATIONS

STATION	ELEVATION (FT)
6+00	5058.19
6+50	5055.51
7+00	5052.11
7+50	5049.12
8+00	5045.40
8+50	5041.38
9+00	5038.46
9+50	5034.54

FEATURE LOCATIONS

STATION	FEATURE	STATION	FEATURE	STATION	FEATURE
5+60	RIFFLE	6+87	POOL	8+15	RIFFLE
5+75	RIFFLE	7+00	RIFFLE	8+20	POOL
5+83	POOL	7+15	RIFFLE	8+30	RIFFLE
6+00	RIFFLE	7+20	POOL	8+45	RIFFLE
6+12	RIFFLE	7+30	RIFFLE	8+50	POOL
6+18	POOL	7+50	RIFFLE	8+60	RIFFLE
6+30	RIFFLE	7+55	POOL	8+75	RIFFLE
6+50	RIFFLE	7+65	RIFFLE	8+80	POOL
6+53	POOL	7+80	RIFFLE	8+90	RIFFLE
6+60	RIFFLE	7+87	POOL	9+05	RIFFLE
6+80	RIFFLE	8+00	RIFFLE	9+10	POOL
				9+20	RIFFLE

STRUCTURE SCHEDULE

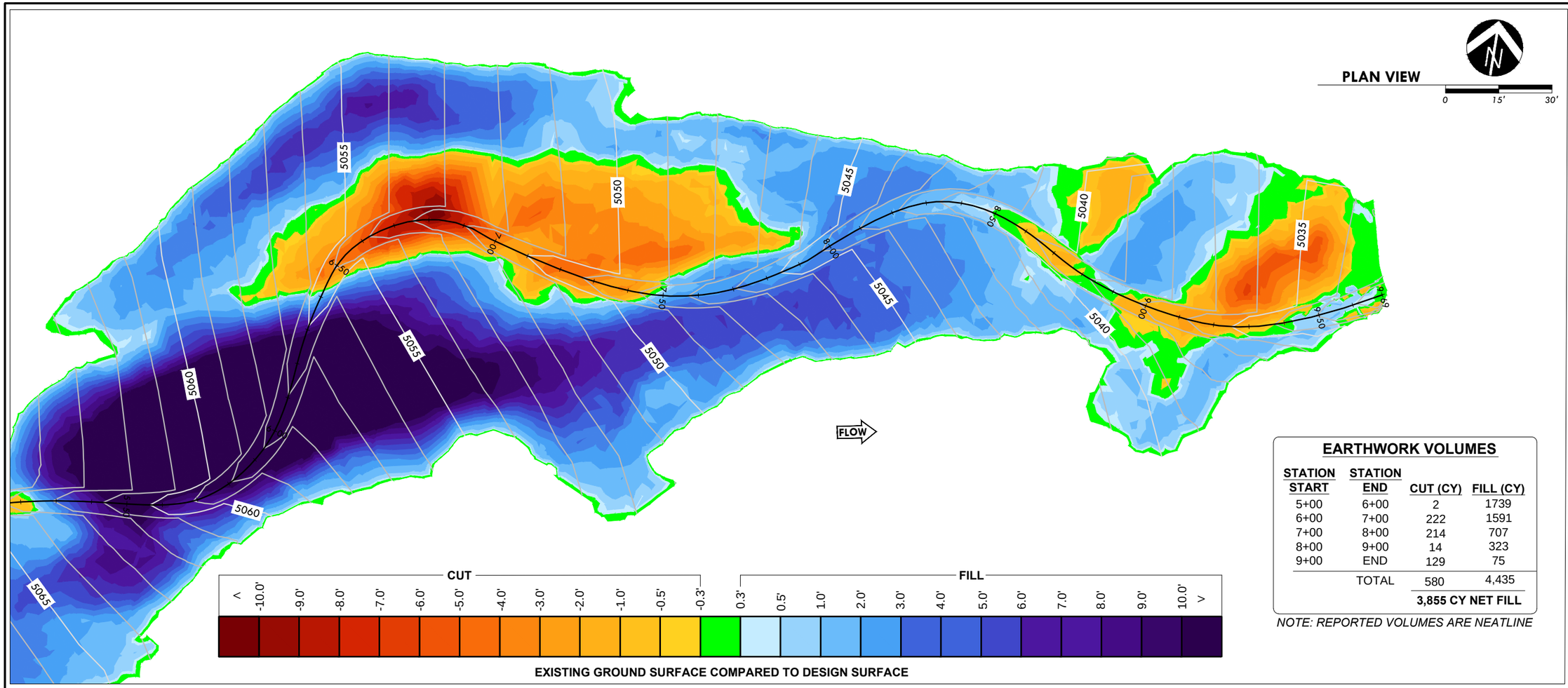
STATION START	STATION END	BANK	STRUCTURE	STATION START	STATION END	BANK	STRUCTURE
1+75	2+15	L	VWBF 1	3+50	3+60	C	SP
1+75	2+25	R	VWBF 1	3+65	3+95	C	CR
1+75	2+15	C	CR	3+95	4+05	C	SP
2+15	2+25	C	SP	4+00	4+10	R	LWST 1
2+25	2+35	R	LWST 1	4+10	4+25	R	VWBF 1
2+35	2+90	R	VWBF 1	4+25	4+35	R	LWST 1
2+50	3+00	L	VSL 1	4+35	4+90	R	VWBF 1
2+50	2+65	C	CR	4+50	5+05	L	VWBF 1
2+65	2+75	C	SP	4+50	4+65	C	CR
2+75	3+10	C	CR	4+65	4+75	C	SP
3+00	3+10	L	VWBF 1	4+80	5+00	C	CR
3+10	3+20	L	LWST 1	5+05	5+20	L	LWST 1
3+20	3+90	L	VWBF 1	5+20	5+65	L	VWBF 1
3+35	4+00	R	VWBF 1	5+25	5+75	R	VSL 1
3+35	3+50	C	CR	5+25	5+40	C	CR
				5+40	5+50	C	SP

Structure Description	Abbreviation	Drawing Sheet
Large Wood Structure Type 1	LWS1	12.0
Vegetated Wood and Brush Fascine Type 1	VWBF1	12.1
Vegetated Soil Lift Type 1	VSL1	12.2
Engineered Riffle	ER	12.3

NO.	DATE	BY	DESCRIPTION	CHK
1	02-15-14	NW	FINAL DESIGN	JM

PROJECT NUMBER
RDG-12-067

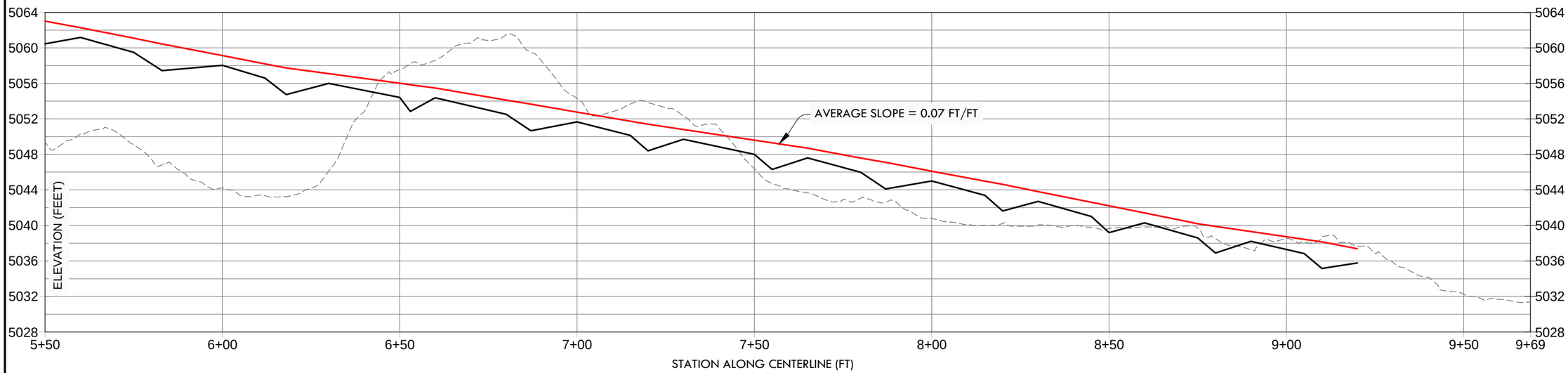
SHEET NUMBER
8.2



EARTHWORK VOLUMES

STATION START	STATION END	CUT (CY)	FILL (CY)
5+00	6+00	2	1739
6+00	7+00	222	1591
7+00	8+00	214	707
8+00	9+00	14	323
9+00	END	129	75
	TOTAL	580	4,435
		3,855 CY NET FILL	

NOTE: REPORTED VOLUMES ARE NEATLINE



LEGEND

EXISTING GROUND — *DESIGN BANKFULL* — *DESIGN THALWEG*

PROFILE VIEW 0' 6' 12' V; 0' 15' 30' H

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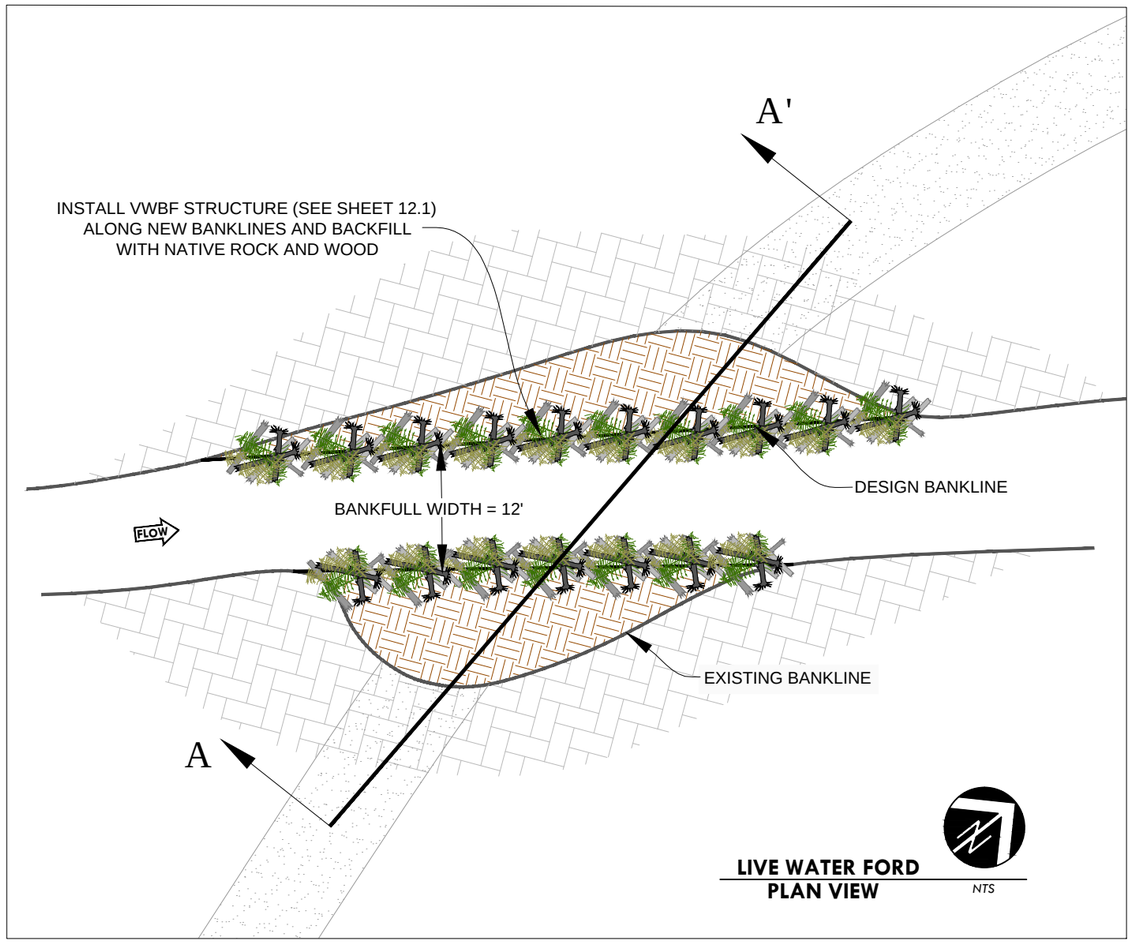
GRADING PLAN AND PROFILE - 2

NO.	DATE	BY	DESCRIPTION	CHK
1	02-15-14	NW	FINAL DESIGN	JM

PROJECT NUMBER
RDG-14-002

SHEET NUMBER
8.3



ROAD PRISM TREATMENTS

THE EXISTING ROAD WILL BE RE-CONTOURED WHERE APPLICABLE USING BOTH PARTIAL AND FULL RE-CONTOURING TECHNIQUES. FULL RE-CONTOURING WILL INVOLVE RE-ESTABLISHING THE NATURAL CONTOURS OF THE HILLSLOPE AND RESTORING THE ORIGINAL SITE TOPOGRAPHY. FILL SLOPES WILL BE EXCAVATED, PLACED ON THE EXISTING ROAD SURFACE AND BLENDED TO THE TOP OF THE OPPOSING CUT SLOPE. PRIOR TO EXCAVATION, ALL SALVAGEABLE VEGETATION WILL BE CAREFULLY STRIPPED FROM THE CUTSLOPE AND PLACED ON THE PRECEDING RE-CONTOURED ROAD SEGMENT. PARTIAL RE-CONTOURING (WHERE APPLICABLE) WILL INVOLVE REMOVING FILL AND REPLACING CUT MATERIAL WHILE LEAVING A FLAT OR SLOPED SECTION OF THE TRAVELED WAY INTACT. AREAS PROPOSED FOR RE-CONTOURING INCLUDE FLATTER ROAD SEGMENTS WHERE THE DEPTH OF THE ROAD FILL IS LIMITED. IN THESE AREAS, THE ROAD PRISM AND TRAVELED WAY WILL BE SCARIFIED, RIPPED AND SLASHED.

AREAS SCHEDULED FOR PARTIAL AND FULL RE-CONTOURING, AND ROAD SEGMENTS WITH NO EXISTING FILL SLOPE WILL BE DECOMPACTED OR “RIPPED”. RIPPING INVOLVES REDUCING THE DENSITY OF THE SOIL AND WILL BE ACCOMPLISHED WITH AN EXCAVATOR. THE CUT BENCH WILL BE RIPPED PRIOR TO PLACING FILL MATERIAL.

STORMWATER MANAGEMENT

IF IDENTIFIED DURING CONSTRUCTION, NATURAL DRAINAGE SWALES WILL BE PRESERVED AND PROTECTED. IF LOCATED ON A ROAD SEGMENT SCHEDULED FOR RE-CONTOURING, A DRAINAGE SWALE WILL BE CONSTRUCTED THROUGH THE RE-CONTOURED ROAD PRISM TO MAINTAIN HYDROLOGIC CONNECTIVITY WITH DOWNSLOPE DRAINAGE FEATURES. SWALE SIDESLOPES WILL BE EXCAVATED AT A MINIMUM 3(H):1(V) SLOPE AND STABILIZED WITH SLASH, MULCH, AND SEEDED.

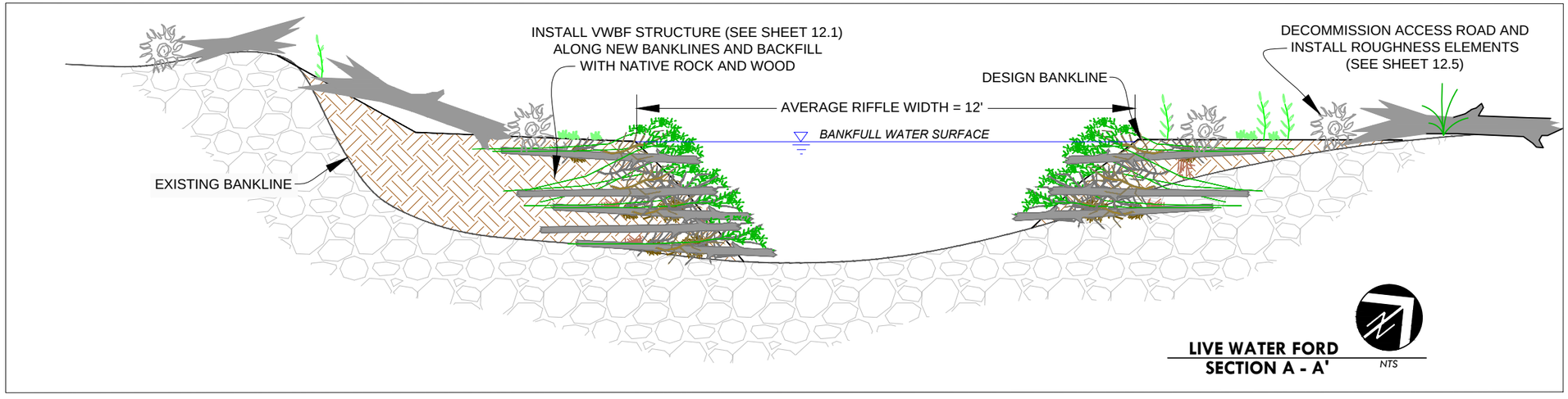
ON PARTIAL AND NON-CONTOURED ROAD SEGMENTS, WATER BARS WILL BE USED TO POSITIVELY DIRECT ALL STORMWATER FLOW OFF THE ROAD. WATER BAR SPACING WILL DEPEND ON THE LOCAL ROAD GRADE. IN GENERAL, STEEPER ROAD SEGMENTS AND MORE ERODIBLE SOILS WILL BE TREATED WITH A SHORT SPACING. ALL WATERBARS WILL BE TIED INTO THE CUTSLOPE AND DRAINED OVER THE FILLSLOPE IN A MANNER THAT PREVENTS EROSION OF FILL MATERIAL. AVERAGE SKEW OF THE WATERBAR SHALL BE 45 DEGREES.

BROADCAST SEEDING

DISTURBED AREAS WILL BE SEEDED TO PROVIDE A RAPID AND RELIABLE MEANS TO ESTABLISH GROUND COVER AND PREVENT SURFACE EROSION. COMMERCIAL SEED MIXES TO APPLY TO RECLAIMED AREAS ARE PROVIDED ON SHEET 13.2 (SEEDING AND PLANTING SCHEDULE). SEED SHOULD BE PLANTED USING THE BROADCAST METHOD, WHEREBY SEED IS SCATTERED ON THE SURFACE OF THE GROUND INSTEAD OF PLANTED IN THE GROUND.

SLASHING, MULCHING AND WOODY DEBRIS PLACEMENT

PLACEMENT OF SLASH, MULCH AND TRANSPLANTABLE SHRUBS AND TREES WILL BE A PRIMARY METHOD TO STABILIZE DISTURBED GROUND SURFACES. THIS TREATMENT INCLUDES PLACING TREES AND BRUSH ON THE SURFACE OF THE RECLAIMED ROAD TRAVELED WAY AFTER PLACEMENT OF SALVAGED SOIL AND FOREST DUFF. TREES FROM ONSITE SHALL BE PLACED ALONG CONTOURS AND PARTIALLY BURIED TO PREVENT EROSION.



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LIVE WATER FORD AND ROAD DECOMMISSIONING DETAIL

NO.	DATE	BY	DESCRIPTION	CHK
1	02-15-14	NW	FINAL DESIGN	JM

PROJECT NUMBER
RDG-14-002

SHEET NUMBER
8.4